

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. By the present amendment, claims 2-10, 12, 13, 15-18, 21 and 23-37 are canceled without prejudice or disclaimer as to the subject matter contained therein. Claims 11, 19 and 20 are amended and new claims 38-42 are added.

Listing of Claims:

Claims 1-10 (*Canceled*).

Claim 11 (*Currently Amended*). A magnetic resonance imaging system comprising:

static magnetic field generating means for generating a static magnetic field containing a uniform region whose magnetic intensity is uniform;

a couch movable in a predetermined direction passing through the static magnetic field, an object to be imaged being laid on the couch;

a reception RF coil arranged fixedly to the static magnetic field generating means;

position changing means for automatically changing a relative position between the couch and the static magnetic field generating means in the predetermined direction[[,] ~~when the object is under imaging~~;

scanning means for scanning the object by transmitting an RF pulse to the object at relative different positions of the couch with respect to the static magnetic field generating means, the different positions being provided ~~determined~~ by the position

reception-processing means for processing the echo signal received by the reception means into echo data;

unfolding performing means for unfolding the MR ~~image~~ images produced in response to at the different positions of the couch using the echo data of the different sensitivity distributions obtained at the different positions of the couch determined by the position changing means.

Claim 19 (*Currently Amended*). An MR imaging method of obtaining an MR image of an object based on a sub-encoding technique (fast imaging technique) using a reception RF coil, the object being laid on a couch, the method comprising the steps of

acquiring echo data for different coil sensitivity distributions of the reception RF coil and echo data for imaging at each of a plurality of different positions of the couch, ~~each the different positions said position~~ being mutually different in a relative positional relationship ~~relationships~~ between a region to be imaged of the object on the couch and the reception RF coil, the couch being moved from one position to another position when each acquisition at the one position is completed;

producing the echo data for imaging into respective images depending on the different positions of the couch; and

unfolding the respective images acquired ~~in response to~~ at each of different ~~positions~~ position of the object using the data of the different coil sensitivity distributions.

Claim 20 (*Currently Amended*). A magnetic resonance imaging system comprising:

a magnet configured to generate a static magnetic field containing a uniform region whose magnetic intensity is uniform;

a couch movable in a predetermined direction passing through the static magnetic field, an object to be imaged being laid on the couch;

a reception RF coil arranged fixedly to the magnet;

a position changing unit configured to automatically change a relative position between the couch and the magnet in the predetermined direction ~~when the object is under imaging~~;

a scanning unit configured to perform scans with the object by transmitting an RF pulse to the object at relative different positions of the couch with respect to the magnet, the different positions being provided by the position changing unit, the scans including an imaging scan and a measuring scan to determine different sensitivity distributions of the reception MR coil at the different positions of the couch;

a reception unit configured to receive through the reception RF coil an echo signal responsive to the ~~scanning~~ scans and to process the echo signal to obtain echo data;

an image producing unit configured to produce respective MR images from the echo data obtained in response to the imaging scan performed at the different positions of the couch; and

an unfolding unit configured to unfold the MR ~~image~~ images produced ~~in response to~~ at the different positions of the couch using the echo data of the different sensitivity distributions obtained at the different positions of the couch.

Claims 21-37 (*Canceled*).

Claim 38 (*New*). The magnetic resonance imaging system of claim 20, wherein the reception RF coil is one in number.

Claim 39 (*New*). The magnetic resonance imaging system of claim 38, wherein the reception RF coil is a whole-body coil used in common for the transmission of the RF pulse and the reception of the echo data.

Claim 40 (*New*). The magnetic resonance imaging system of claim 20, wherein the position changing unit is configured to move the couch every half of a length of the reception RF coil in the predetermined direction.

Claim 41 (*New*). The magnetic resonance imaging system of claim 20, wherein the position changing unit is configured to move the couch to a first couch position and a second couch position, a region to be imaged of the object being located at the first couch position with the region shifted in part from a sensitivity distribution region of the reception RF coil and the region being located at the second couch position with the region contained entirely in the sensitivity distribution region of the reception RF coil, the system further including an instruction unit configured to instruct a contrast agent to be injected into the object when the couch is located at the second position.

Claim 42 (*New*). The magnetic resonance imaging system of claim 41, wherein the measuring scan comprises both a first sensitivity-distribution measuring scan for measuring a sensitivity distribution of the reception RF coil carried out when the

couch is located at the first couch position and a second sensitivity-distribution measuring scan for measuring a sensitivity distribution of the reception RF coil carried out when the couch is located at the second couch position;

the imaging scan comprises both a first imaging scan for obtaining the MR images of the region carried out when the couch is located at the first couch position and a plurality of second imaging scans for obtaining the MR images of the region carried out when the couch is located at the second couch position;

the image producing unit is configured to reconstruct the echo data obtained by both of the first and second imaging scans into image data; and

the unfolding unit is configured to unfold the image data obtained through each of the second imaging scans by using both of the echo data obtained through the first and second sensitivity-distribution measuring scans and the image data obtained through the first imaging scan.